

## Evaluation of Position Description

Labor Category/FLSA: Exempt

       Current Position Description  
  X   Proposed Position Description

Date Prepared: 07/07/03

Approving Official: Name: D. Watford/Sheryl A. Wheeler Signature: [Signature]  
Title: Contractor HR/ HR Specialist

Position Title/Series/Grade: Mechanical Engineer, GS-830-12  
(Energy)

Organization: Division of Property Management  
(Energy)

Standard Used: Mechanical Engineer, GS-0830-12.

**Title and Series Determination:** The subject position is involved in the developing and coordinating of the energy and water management initiatives for the operation and maintenance of central utilizes supporting NIH facilities. The work involves planning coordinating an energy and water management program for the operation, maintenance, repair and regulatory compliance of the entire physical plant.

The GS-0803 series involves professional positions in the field of mechanical engineering typically required the application of thermo-dynamics, mechanics and other physical mathematical and engineering sciences to perform concerned w tithe production, transmission measurement and use of energy especially heat and mechanical power. The subject position meets the series definition of the Mechanical Engineering, GS-0803 standard since the incumbent is responsible for working on mechanical problems that pertain to the use of energy and mechanical power.

**Grade Level Determination:** See the attached FES evaluation form using the factory-by factor basis.

**Conclusion:** Based upon the foregoing evaluation in conjunction with the FES evaluation, the subject position is properly classified as Mechanical Engineer, GS-830-12.

## FACTOR EVALUATION SYSTEM (FES)

<b>Title/Series/Grade</b> Mechanical Engineer, GS-83012				<b>Position Number</b>
<b>Organization</b> DHHS, NIH, Division of Property Management				
<b>Evaluation Factors</b>	<b>Factor Level</b>	<b>Points Assigned</b>	<b>Standard(s) Used</b>	<b>Comments</b>
1. Knowledge Required by the Position	1-7	1250 points	Mechanical Engineering, GS-830, TS-28, dated June 1977	
2. Supervisory Controls	2-4	450 points		
3. Guidelines	3-4	450 points		
4. Complexity	4-5	325 points		
5. Scope and Effect	5-3	150 points		
6. Personal Contacts	6-3	60 points		
7. Purpose of Contacts	7-3	120 points		
8. Physical Demands	8-1	5 points		
9. Work Environment	9-1	5 points		
<b>TOTAL POINTS</b>	2815		<b>REMARKS</b>	
<b>GRADE CONVERSION</b>	GS-12		<b>SPECIALIST:</b> Dwatford/Sheryl A. Wheeler <b>DATE:</b> July 7, 2003	

## Position Description

### Installation:

**Title:** Mechanical Engineer (Energy)  
**Occ Series:** 0830  
**Pay Plan:** GS  
**Grade:** 12

**Introductory Statement:** The Division of Property Management (DPM) serves all of the NIH Community by providing support for renovations, new construction and maintenance of existing facilities, utilities and grounds. The Division provides professional leadership for the engineering programs of the National Institutes of Health (NIH). The scope of DPM operations is such that the effectiveness with which they are carried out has a major and direct effect on the worldwide biomedical research programs of the NIH. In addition to the main facilities at the Bethesda Campus and in Poolesville, MD, NIH has facilities at Research Triangle Park, North Carolina, Rocky Mountain Laboratory in Montana and the Gerontology Research Center in Baltimore, MD.

This position is organizationally located within the DPM in one or more of the subordinate organizational components responsible for the provision of operations and maintenance of NIH facilities. The position is multi-disciplinary and requires the incumbent to be multi-skilled and flexible in the types and complexity of work performed. The position requires that the incumbent be able to work independently and take the initiative to complete the work assigned with a minimum of direct supervision regardless of the nature of the work thus requiring that specific trade skills be shared between staff members.

### Duties

The incumbent serves as the Energy Engineer within the Central Utilities and is responsible for developing and coordinating the energy and water management initiatives for the operation and maintenance of central utilities supporting all NIH facilities. The incumbent is an authority in the area of energy and water management and is responsible for planning and coordinating an energy and water management program related to the operation, maintenance, repair, and regulatory compliance of the entire physical plant. The incumbent initiates and organizes correlating measures for program operations, equipment, procurement, and utility support functions. The incumbent develops and

provides innovative design and engineering methods where needed to result in substantial cost savings as well as increased energy and water efficiency.

The incumbent's responsibilities are focused on providing methodology for managing the energy and water consumption and the most pragmatic allocation of utility operations as follows:

Provides an integrated energy and water management and utilitarian approach in support of the utilities operation and maintenance function for NIH facilities. The incumbent is responsible for the establishment of an efficient and resourceful energy plan to meet and maintain all of NIH's central utility requirements in a consistently reliable manner. Guiding the incumbent's tasks is the continuing charge to sustain the critical operations of a world-class biomedical research facility and hospital. The incumbent formulates concrete and economical approaches to energy and water management that complement, but do not compromise, the mission of the NIH.

Develops central utility cost forecasts, budget projections, and strategic planning for a variety of purposes, including utility efficiency and resource and cost management. The incumbent serves as a technical representative in rate and service negotiations with specific utility service representatives. He/she develops concepts and approaches for identifying past, current, and future energy and water usage and needs. The incumbent supports and justifies energy and water conservation projects for budget submissions, develops impact statement, and establishes priorities.

Reviews and analyzes programs and projects that impact energy and water consumption. The incumbent prepares recommendations for energy and water program alternatives that affect the efficiency of the utility operations and maintenance. Evaluations are coordinated with the incumbent's in depth knowledge of current programs and future planning objectives with an eye to maintaining a continuity of service while applying energy and water saving techniques. The incumbent scrutinizes preliminary and final design features of utility systems that impact the energy and water efficiency of NIH facilities. He/she offers advice on strategies that will assure the most efficient operation and promote the NIH's scientific protocols.

Coordinates with the MEO organization and NIH concerning future energy and water shortages and addresses contingency plans that will ensure a reliable continuity of service. The incumbent works with the ICs, and utility company representatives, serving as a liaison to establish the most effective plans to meet the utility support needs while maintaining a conservative approach. The incumbent is responsible for developing such contingency plans that can be implemented immediately should the need arise.

Recommendations by the incumbent are linked with plans formulated by the NIH Master Plan to derive a fundamental strategy and application for energy and water management.

Promotes energy and water conservation awareness to the NIH populace, obtaining feedback on specific usage and outage problems, and providing advice and recommendations on controlling energy and water consumption. The incumbent is asked to lead energy awareness programs that foster utility conservation and boost environmental consciousness. The incumbent uses his/her tenured knowledge of energy matter, combined with resourceful presentation skills to bolster the public's awareness and support of energy and water conservation.

## FACTORS

### *Factor 1 - Knowledge Required by Position*

This position requires a comprehensive knowledge of the principles and practices of mechanical engineering and its application to energy and water management and conservation. The incumbent uses this knowledge to provide expert advice in the areas of design, construction, application, management, and conservation of mechanical/electrical systems that will ensure a responsive and energy efficient operation.

In addition to technical expertise in the field, leadership skills are essential for the incumbent to apply new developments and/or experimental solutions to retrofit existing systems and resolve problems. The incumbent must possess the ability to communicate effectively in energy and water use management and conservation. Moreover, the incumbent must have excellent written and oral skills to prepare presentations acceptable for publication and to plan and organize energy and water management and conservation initiatives. The incumbent must be able to develop presentations that are tactful yet persuasive and meaningful, with attention to detail and cognizant of program interrelationships.

The incumbent must have tactical knowledge and refined skills to gather, analyze, and evaluate technical information. The ability to effectively interpret and apply pertinent regulations concerning energy and water usage and consumption is essential to maintaining an effective energy program. In addition, the incumbent must be able to correlate this technical information with knowledge of the short and long range objectives, interests, and concerns of the NIH, and with the programs and organizational functions. This knowledge is essential for the incumbent to be able to serve as an NIH representative in matters related to the energy and water management program, and when communicating with high-level officials in the government or public sector. The incumbent's recommendations regarding energy and water management, maintenance, or operation utility systems are widely accepted as authoritative.

### *Factor 2 - Supervisory Controls*

The incumbent works with substantial independence, under the general supervision of the Chief, Utilities Operation. Assignments are accomplished in accordance with very broad objectives and are given in broad terms of priority considerations and resource restraints. The incumbent has wide latitude for independent professional judgment, interpretation, and decision-making. Review is generally limited to evaluating the effects of overall program objectives.

The incumbent is expected to exercise technical insight and apply judgement in interpreting and adapting existing conventional practices and procedures to develop new approaches and strategies. The incumbent's advice, decisions, and recommendations are considered technically correct and performance is judged on the basis of the quality of the functions carried out under his/her direction, and their contributions to the overall NIH mission.

### *Factor 3 - Guidelines*

Guidelines are broadly stated directives and policy statements from the Department of Energy, Executive Orders, Federal and agency regulations, engineering manuals, and manufacturer's publication. Since the guidelines are frequently inadequate for solving complex problems, or specific utility issues unique to the NIH, the incumbent must demonstrate judgment in deviating from traditional methods and adapt resourceful methods in the resolution of situations as they occur.

### *Factor 4 - Complexity*

Assignments involve work in a broad range of activities and specialized electrical/mechanical engineering functions. The incumbent must identify program issues, correlate high profile protocols and priorities, and make decisions in solving technical, administrative, and socio-economic problems involved in implementing new energy and water saving utility systems that will promote continuity and enhance program missions. The incumbent must be sensitive to the nature of each project and be alert to areas of uncertainty requiring development of new techniques and criteria.

The incumbent provides solutions to correct serious utility and infrastructure vulnerabilities that could impair operation of NIH facilities. Correction are often complicated by deteriorating central utility plant equipment and distribution systems, safety and environmental hazards, and inefficient, unreliable utility systems. The incumbent must use judgment in addressing problems of the hospital and research environment, and maintain appropriate contingency emergency energy plans and back-up procedures to assure around-the-clock operations of these critical facilities.

*Factor 5 - Scope and Effect*

The purpose of the work is to develop, direct, and administer the energy and water conservation activities. The success of leading a vigorous and well-advanced energy program is key to shaping the future of biomedical research conducted at the NIH. This necessitates broad involvement in formulating new energy and water conservation approaches and techniques that complement the mission of and adequately protect the utility systems without unnecessary affect on mission funding and scheduling.

The incumbent provides technical guidance and information on a range of topics affecting conservation activities.

*Factor 6 - Personal Contacts*

This position requires frequent contacts with engineering personnel, manufacturer's representatives, contractors, and officials and professionals of other agencies. Close working relationships are maintained with management officials and IC representatives in order to keep abreast of major program developments, activities and goals.

*Factor 7 - Purpose of Contacts*

The purpose of the contacts is to provide and receive technical advice concerning matters within the program area. The incumbent participates in conferences, meetings, and presentations involving issues of significant consequence to the management of NIH's energy initiatives.

*Factor 8 - Physical Demands*

The work is generally performed in an office setting. At times, the work involves a considerable amount of walking, climbing, and other forms of physical exertion associated with site inspections and project evaluation activities.

*Factor 9 - Work Environment*

Site inspections and technical consultations require the incumbent to be on site where there are moderate discomforts and unpleasantness, such as high levels of noise in plants, high temperatures around steam lines, or various other risks. Where potential safety hazards exist, the incumbent is required to use personal protective clothing and gear.